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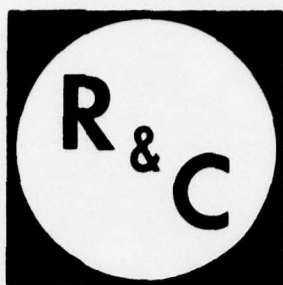


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ANNUAL REPORT IN SUPPORT OF
TECHNICAL DEVELOPMENT PLAN 43-03X
EDUCATION AND TRAINING DEVELOPMENT

PHASE V REPORT

November 15, 1976

ROWLAND & COMPANY, INC.
NAVAL AEROSPACE MEDICAL RESEARCH LABORATORY
Pensacola, Florida

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and for the
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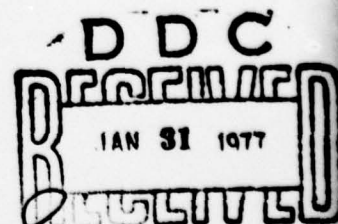
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21. ABSTRACT (Continue on reverse side if necessary and identify by block number) This is a report on Phase V of a multi-phase program to develop a Data Management System and a Student Management System. The Data Management System is a software package that supports online man-computer operation in an interactive mode. It supports the creation of a database, update of a database, search of the database and does it with full english language man-computer dialog. It has been mechanized on a Data General NOVA 800 minicomputer. All programs have been written in high level language -		

FORTRAM IV - and therefore can be transported to other computers without major reconversion effort. The combination of a Data Management System and a low cost minicomputer makes available a resource that can support the rapid development and operation of an information management system to serve diverse types of organizations and their needs.

The Student Management System was to be a specification document. It incorporates management feedback concepts, student naval pilot record concepts, record analysis techniques, and sample data outputs which can be used to promote greater individualization of student training treatments. Depending upon the resources available, it can be implemented within a manual system or a computerized, online, interactive system - such as the Data Management System described above.

This report describes the progress and results on these two systems during PHASE V - which is the last phase of the development effort.

SUMMARY

This is a report on Phase V of a multiphase program to develop a Data Management System for use in both the Naval Pilot Training System and the Naval Aerospace Medical Research Laboratory, and to develop a Student Management System for use in the Naval Pilot Training System.

The Data Management System (DMS) is a generalized computer software package which supports the creation and the operation of a database facility. A database is a single source of all data and all users access it to meet their information needs. The Data Management System, when used with a mini-computer and multiple terminals, provides many users with direct access to the stored data.

During Phase V, the Database Subsystem and the Query/Retrieval Subsystems of the Data Management System were finalized, implemented, tested and demonstrated to the on-site technical monitor. In addition, the total integrated DMS package was completed and demonstrated. An interim description of the DMS was distributed with the third quarterly report.

Portions of the 1970 flight student daily hop records were placed within the DMS and typical searches of its contents were made. Demonstrations of the operation of the Query/Retrieval Subsystem were made using these stored records.

Program documents are described.

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SECTION I

INTRODUCTION

This report covers the activities pursued and the milestones achieved in Phase V of this development program. Phase V was the last phase. It covered the period from November 16, 1975 to November 15, 1976. Progress reports issued during this period are covered in references 1 and 2

This development program is Task 21B of Advanced Development Objective 43-03, Education and Training. The Navy Personnel Research and Development Center, San Diego, California, is the responsible development agent for this ADO. The contracting agent is the Personnel and Training Research Program Group of the Office of Naval Research.

This program is being executed on-site at the Naval Aerospace Medical Research Laboratory, Pensacola, Florida. LCDR R. E. Doll, USC, USN, of the Psychology Division of the Laboratory, is the on-site technical monitor.

In January of 1976, the on-site technical monitor requested a realignment of the priorities of the development program products. The DMS-2 package, which was to be placed on the UNIVAC 1108 computer, was eliminated. First priority was given to the completion of the planned DMS-1, which was to be implemented and demonstrated on the Data General NOVA 800 minicomputer. Continued effort on the Student Management System specification would receive secondary priority and would be continued only if manpower was available to pursue it. As it turned out, all manpower was applied to the completion of the planned Data Management System on the NOVA 800 minicomputer.

SECTION II

DATA MANAGEMENT SYSTEM (DMS)

2.0 INTRODUCTION

The Phase V plan for the DMS included the completion of the Data Base Subsystem, the initiation and completion of the Database Query/Retrieval Subsystem and the integration of the three major subsystems into an integrated functional package. In addition, three documents were to be produced on the DMS: (1) a design manual; (2) a users manual; and (3) a Data Base Administrator's Manual.

The design of the DMS was completed and its operation demonstrated to the on-site technical monitor.

2.1 RESULTS ACCOMPLISHED

2.1.1 Data Management System

All of the planned capabilities for the DMS were implemented. The major transactions provided included: (1) file maintenance; (2) database creation; (3) database update, including a batch update mode; (4) database search, including a capability to secure descriptive and analytic statistics on the search results; (5) a report generation of the search results; (6) user access control to the DMS and to the database contents; and (7) utility programs to provide for sorting and merging of files created by the DMS search capability.

Access to all of these transactions is via a master menu and through supporting menus. The man-computer dialog instructions provide detailed guidance to the user thereafter.

2.1.2 Data Base Administrator's Manual

Advance copies of the Data Base Administrator's Manual were prepared and delivered to the customer. Final copies are being prepared for printing and distribution. They are scheduled for delivery in February, 1977.

This manual contains all of the information which a person will need who has been given the responsibility to perform data base administrator functions and responsibilities. Depending upon the area of DMS usage and the complexity of the database files to be implemented, the Data Base Administrator functions can be performed by personnel on a part-time basis.

The manual includes all of the procedures necessary to the planning, creation and operation of the database. It also includes sections that cover the procedures for controlling user access to the DMS.

2.1.3 Users Manual

The Users Manual is intended for those personnel who will use the DMS for purposes of searching the database, making updates, and using the file maintenance capabilities.

Advance copies were completed and delivered to the on-site technical monitor as scheduled.

2.1.4 DMS Design Manual

The DMS Design Manual is intended to be used by systems and programmer personnel who will be responsible for maintaining the DMS and making design changes which will extend its capabilities to meet unique needs of the users. Its contents include a brief description of the DMS, each of the major subsystems, and a complete listing of the computer programs associated with each.

An advance copy of this manual was given to the on-site technical monitor. Like the other two manuals listed above, its final printed form is scheduled for delivery in February, 1977.

SECTION III

TEST AND DEMONSTRATIONS

The Phase V plan called for the demonstration of the DMS in two parts. The first part was to be a step-by-step test of all keyboard entries and DMS responses which are contained in the USERS and DBA's Manuals. The second part was the demonstration of a prototype database which contained typical student naval aviator performance data.

Both of these were executed as planned. The second part of the demonstration contained typical flight hop record data on students. All searches and statistical analysis were made against these data. Typical hard copy printouts of search and statistical analyses were secured.

SECTION IV

DOCUMENTATION

The publications associated with the Data Management System product are identified and described in previous sections. In addition to this annual Phase V report, a final program technical report is in preparation. This final report will summarize the accomplishments of the five phases and will cite all publications prepared under the development program.

SECTION V

REFERENCES

1. Combined First/Second Quarterly Report for the Development of the Computerized Data Management System. May 15, 1976. Rowland & Company, Inc.
2. Third Quarterly Report for the Development of the Computerized Data Management System. August 15, 1976. Rowland & Company, Inc.

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